PROCEEDINGS OF THE CLUB

Minutes of the Meeting of December 7, 1943

The meeting was called to order at 8:15 p.m. by the President, Dr. William J. Robbins, in Room 601 Schermerhorn Hall, Columbia University. There were 150 members and friends present.

The minutes of the preceding meeting were accepted as read.

The budget for the year 1944 was presented by Dr. Levine, and a motion for its acceptance was passed by the Club.

Dr. Robbins announced the Annual Meeting and Dinner to be held at the Men's Faculty Club, Columbia University, on January 4, 1944.

The scientific program consisted of a lecture by Dr. Charles Thom entitled "A Mycologist Looks at Antibiotics, Especially Penicillin." The speaker's abstract follows:

To a group of botanists, the current literature of antibiotic substances presents a concept not new but expressed in quite different terms from those familiar. It has long been known that a walnut tree discourages some other plants from living near by. Windling first regarded the attack of *Trichoderma* upon other molds as parasitism. I reported *Penicillium rugulosum* as attacking and destroying *Aspergillus niger*. Others discussed the "staling effect" which kept two molds grown in the same Petri dish from overrunning each other. Miss Morrow found a whole series of molds and bacteria in Texas soil which would inhibit *Phymatotrichum,* the root rot organism of cotton, in Petri dish cultures. The change of interpretation came when Fleming showed that his strain of *Penicillium notatum* produces a substance which can be isolated and used to stop the growth of bacteria. Florey and his colleagues followed Fleming and laid a foundation for producing penicillin as a therapeutic agent.

Today we have a large number of laboratories and manufacturing plants putting all their energy into the adjustment of laboratory and industrial procedures to the demands of *P. notatum* in producing penicillin. Certain features of this fermentation must be discussed. (1) The mold being aerobic can be grown in "still" culture, i.e. on the surface of liquid and solid media without agitation, or in submerged culture in liquids that are thoroughly aerated by some shaking apparatus, by stirring or by blowing air through the mass. Under these conditions the mold grows as pellets of hyphae; short, coarse cells radiating from growth centers to form masses up to 2 mm. in diameter without producing conidia. (2) To produce a satisfactory yield, however, the mycelial mass must all reach the physiologically mature or spore producing stage at one time. Penicillin is produced at this stage whether spores actually appear or not. (3) *P. notatum* is unstable under continuous culture. Unless handled carefully a strain breaks down into several, differing in appearance, amount of spore production, and often producing very little penicillin. (4) New strains have been collected from widely different lands. These vary from producing very little penicillin to strains approximating the best we have. (5) Manufacture procedures proposed vary from 1,000 gallon vats to large flasks on the shaking machine, or in still culture to many types of bottles, flasks, test tubes, or gauze. It is hoped that the needs will be met by a combination of these proposals.

After animated discussion and inspection of the samples and literature which Dr. Thom provided, the meeting adjourned at 9:40 p.m.

Respectfully submitted,

Edwin B. Matzke
Corresponding Secretary

Minutes of the Meeting of December 15, 1943

The meeting was called to order at 3:30 p.m. by the President, Dr. William J. Robbins, in the Members Room at The New York Botanical Garden. Thirty members and friends were present.

The minutes of the preceding meeting were accepted as read.

The scientific program of the afternoon was presented by Dr. Harold W. Rickett of The New York Botanical Garden. Dr. Rickett talked about his experiences on his recent trip to Mexico. He told of his visits with some of the botanists associated with the educational institutions of Mexico. He had on display some very interesting photographs and drawings made during his trip.

The meeting adjourned at 4:30 p.m. Tea was served by members at the Garden.

Respectfully submitted,

Honor H. Hollinghurst
Recording Secretary

Minutes of the Annual Meeting, January 4, 1944

The annual dinner meeting was held on the evening of January 4, 1944 at the Men's Faculty Club of Columbia University. Seventy-eight members and friends were present.

The meeting was called to order by the retiring President, Dr. William J. Robbins. The minutes of the preceding meeting were accepted as read.

Dr. Robbins announced that the presentation of the annual reports by the officers of the Club would be deferred until the next meeting.

Dr. Matzke, Chairman of the Ballot Committee, reported that the following people had been elected to office for the year 1944:

President: Michael Levine
1st Vice-President: Fred J. Seaver
2nd Vice-President: H. K. Svenson
Corresponding Secretary: Edwin B. Matzke
Recording Secretary: Honor M. Hollinghurst
Treasurer: Page J. Karling
Editor: Harold W. Rickett
Bibliographer: Lazella Schwarten
Business Manager: Harold H. Clum

Members of the Council: J. S. Karling, E. H. Fulling, Rutherford Platt, Lela V. Barton
Delegate to the Council of the New York Academy of Sciences: Bernard O. Dodge
Representative on the Board of Managers of The New York Botanical Garden: Henry A. Gleason
Representatives on the Council of the American Association for the Advancement of Science: John H. Barnhart, Albert F. Blakeslee

Dr. Robbins then introduced the newly elected President, Dr. Levine, who spoke a few words of greeting to the Club.

The guest speaker of the evening, Colonel Arthur F. Fischer, G.S.C., was introduced by Dr. Robbins. Colonel Fischer discussed the problem of quinine and its production. His speech, in its entirety, is published in this number of Torreya, pp. 1-5.

The meeting was adjourned at 8:30 p.m. to permit informal discussion and meeting with friends.

Respectfully submitted,

Honor H. Hollinghurst
Recording Secretary

Minutes of the Meeting of January 19, 1944

The meeting was called to order at The New York Botanical Garden by the President, Dr. Levine. There were 22 members and guests present. The minutes of the annual meeting of January 4, 1944, were accepted as read. Dr. Levine appointed an auditing committee consisting of Dr. Dodge, Chairman, Dr. Seaver, and Mr. Montagne. Mrs. Karling, the new Treasurer, was invited to attend the meetings of the committee. It was moved by Dr. Robbins and voted by the Club that the following communication sent by Dr. Graves concerning Dr. Herbert M. Denslow be spread upon the minutes:

> Dr. Herbert M. Denslow, the oldest living member of the Club, who will be 92 years old this coming August, a former President of the Club and Editor of the Bulletin, sends his greetings to the Club and regrets that he cannot be present at the Annual Dinner. He wishes the Club members a Happy New Year and assures them that he is comfortable and being well cared for.

The scientific program consisted of an illustrated lecture by Dr. Robert Bloch of Yale University on "New Experiments on Cellular Differentiation and Histological Pattern." The speaker's abstract follows:

Various types of regeneration of histological pattern were studied in *Monstera deliciosa, Coleus hybridus,* and *Taraxacum kok-saghyz.* The study of cellular differentiation and histological pattern in plants by means of regeneration experiments in more or less mature, differentiated zones has various advantages. Compared with the fully embryonic apical growing points, cells are here large, vacuolate and more thick-walled, and thus the changes both in cytoplasm and membranes can be much better observed.

One frequent pattern in plants, which forms a common feature of generally more complex tissue patterns, is formed by successive layers of suberized cells, lignified, sclerotic elements and parenchymatous cells, arranged in concentric fashion. This pattern is often developed as a dermal pattern, adjacent to a great variety of external and internal, normal and pathological surfaces, cellular centers, and lacunae (e.g., hypodermis, exodermis, secretory ducts, necrotic centers). In *Monstera deliciosa,* this pattern could be induced or regenerated in various positions, but always in conjunction with an outer or inner surface. The developmental potency of forming this pattern is not reached before the cells and tissues have attained a certain age, but is still present in comparatively old, differentiated parenchyma and collenchyma cells. External conditions, such as oxygen supply and humidity, influence the character of the pattern; and intracellular changes also suggest that metabolic processes, at or near surfaces, are instrumental in the induction of this pattern.

Another example of regeneration of histological pattern is the differentiation of xylem strands in vacuolate parenchyma cells in the wounded internode of *Coleus.* The plane of cell division and wall differentiation do not show here as immediate a relation to the wound surface as in *Monstera.* However, the bands of lignified thickening in successive groups of differentiating xylem cells show an orderly arrangement, both in relation to each other and to a visible configuration in the cytoplasm (granules and streaming) which precedes them. This suggests the presence of a cytoplasmic pattern which, corresponding to the phragmosome in cell division, is here the basis of differentiation in the cell wall.

In both *Coleus* and *Taraxacum* older xylem elements are gradually dissolved in the wound tissue; this process is initiated by the formation of tyloses in the vessels.

The formal meeting adjourned at 4:40 p.m., but an informal discussion of Dr. Bloch's paper continued over the refreshments generously provided by the ladies of The New York Botanical Garden.

Respectfully submitted,

Edwin B. Matzke
Corresponding Secretary

Minutes of the Meeting of February 1, 1944

The meeting was called to order at 8:20 p.m. by President Levine in Schermerhorn Hall, Columbia University. Forty-four members and friends were present.

The minutes of the preceding meeting were approved as read.

Twelve persons were unanimously elected to annual membership, and two to associate membership. One transfer from associate to annual membership was approved. Dr. Roland Harper was unanimously elected to honorary life membership. The resignations of 25 annual members and of 31 associate members were accepted with regret.

The Treasurer's Annual Report for 1943 was read by Dr. Whaley, as follows:

Balance as of January 1, 1943		$ 2,301.12
Cash received, January 1-December 31, 1943 (Transactions include internal items of $20,000)	$ 25,911.62	
Total		$ 28,212.74
Cash disbursed, January 1-December 31, 1943	$ 27,224.04	
Balance		$ 988.70
Less endowment monies in cash account	$ 43.57	
Actual cash in checking account	$ 945.13	
Cash in current expense account	$ 1,033.32	
Cash on hand, January 1, 1944		$ 1,978.45

The smaller balance at the end of 1943 than at the end of 1942 is largely the result of late mailing of dues bills bringing most of the payments after the end of the year, and expenditure of $1,000.00 during 1943 for a Memoir actually published in 1942. The balance reported at the end of 1942 did not include money set aside in a cash reserve fund. The net balance at the end of 1943 is approximately the same as the actual unobligated balance at the end of the previous year. The Club lived within its income during 1943, something which had not been done in the several preceding years. In general the financial status of the Club at the present time is excellent despite many factors imposed by war conditions.

It was moved by Dr. Small that the Club accept the report of Dr. Whaley with an expression of thanks for his services as Treasurer. The motion was seconded and passed.

The scientific program for the evening was presented by Dr. W. Gordon Whaley who discussed "Rubber Bearing Plants in the Present Emergency." His talk was well illustrated with Kodachrome slides. Dr. Whaley's paper will be published in Torreya in the near future.

Following discussion of the subject, the meeting was adjourned at 9:55 p.m.

Respectfully submitted,

Honor M. Hollinghurst
Recording Secretary